Submitted to

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SYNOPSIS

RESEARCH TITLE

"SYNTHESIS OF TRANSITION METAL COMPLEXES WITH BIOLOGICALY ACTIVE SCHIFF BASES"

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" SYNTHESIS OF TRANSITION METAL COMPLEXES WITH BIOLOGICALLY ACTIVE SCHIFF BASES "

INTRODUCTION :

The transition metal complex with Schiff bases found huge application in different field such as pharamaceutical, agriculture, drug, dyes, metallurgy, photography, enviromental science, toxicology and analytical chemistry.

The role of transition metal complexes in living system as catalyst for metabolic process. It is also act as promotors for storage and transport of metal ion of donor molecule and as a agent of transmission of energy is well established.

The coordination complexes which are present in minerals, plants and animals one of great importance because they play important functions were they present. Beside its valuable biological activities, unique properties and application created interest amoung the researcher.

The study in complexation behavior of such base ligand having a various substituents with 0-N, 0-S, 0-N-S as a donor sites have been reported.

Various studies have show that the azomethine group (>C=N-)in a Schiff base metal complexes. Consider biological significance[1] and found to responsible for biological activtiy such as fungicidal and insecticidal[2] and anticarcinogenic properties. Catalytical activity and anticancer drug[3], antitumor[4-5], DNA binding[6-7] and DNA cleaning.[8,9,10]

REVIEW OF LITERATURE AND DEVELOPMENT IN THE SUBJECT :

During last few year a significant amount of investigation related to the characterisation of Schiff bases derived from anilines, diamines, aminoacids, hydrazines, semicarbazides, thiosemicarbazides, benzoxazole, benzothiazole, hydrazones, benzimidazole, orthohydroxy acetophenone, salicyldehyde, 2-hydroxynaphthaldehyde, 2-amino pyridine, antipyrine, dehydroacetic acid and primary aromatic amines and their metal complxes have been reported in the department of chemistry Dr. Babasaheb Ambedkar Marathwada university and our university also.

OBJECTIVES OF THE RESEARCH :

* Synthesis of Schiff bases and their characterisation by verious techniques.
* Study of transition metal complexes with synthesised newlly Schiff bases.
* Characterisation of newlly prepared transition metal complexes.
* To study biological activities of Schiff bases and metal complexes.

METHODOLOGY TO BE ADOPTED :

Prepration and characterication of transition metal complexes with synthesised newly Schiff bases by using various physico- chemical tenchniques such as NMR (Nuclear Magnetic Spectroscopy), IR (Infra red spectroscopy), UV (Ultra violet visible spectroscopy)spectral studies, thermal and x-ray analysis, magnetic susceptibility, elemental analysis and conductivity and biologically activity can be studied against various stains.

IMPORTANCE OF STUDY:

1) International Status:-

schiff base are important class at ligand in coordination chemistry. Schiff base was first reported by Hugo Schiff in 1864. Schiff base can be syntheised by condensing carbonyl compounds and amines in various conditons and in different solvent with elimination of water molecules.

Amel Djedouani, Abdrerrahem Benbaas, Soflane Boucida and Tahar Douadi reported the work synthesised Copper complexes.

Hafeez Ullah, Feroza Hamid Wattoo Department of chemisry Quaid-i-Azam university Islamabad pakistan reported synthesis of Schiff bases derived from Dehydroacetic acid with various subtituted aniline in 2015

Casabo J, Marqnet J, Moreno- manas M perior M and Teixidor F reported synthesised complexes of 4-hydroxy-6- methyl -3 [3- dimethyacryoyl] - 2H- pyran-2-one in 1990

2) National status :-

A. K. Gupta, R. Pal Department of Chemistry Maharshi Markandeshwar university Mullana (Ambala) reported Dehydroacetic acid based Schff's Bases and their metal complexes. in 2014

V. Beniwal, R. Pal, A. K. Gapta. Department of chemistry. Maharshi Markandeshwar university Mallana Ambala reported novel. dehydroacetic acid based Hydrazone Schiff base metal complexes of first transition series : synthesis and biological evaluation study in 2014

3) Significance of the study :-

* Transition metal form stable complex with Schiff base ligand the research scientist working in the field due to its anique properties and applications. It is playing increasingly singificant roles in the development of coordination chemistry.

* Schiff base and their metal complexes possesing novel structural features, interesting spectral and mangnetic proerties have been subjected to intensive research due to their importane in medical, agriculture, biological and Industrial freld.

* Lot of number of Shciff bases are known to be medicinally important and used to desing medicinal compounds[12-13]

* They are active catalyst.

Year wise plan of work and target to be achieved :-

The proposed project work requires a periods of at least three years.

Year wise distribution of work :-

First year :- Review of literature and perparation of Schiff bases.

Second year :- Synthesis of transition metal complexes with Schiff beses and structural elucidation of synthesised complexes by spectroscopic tachniques like NMR, IR, UV etc.

Third year :- Biological and physicochemical studies of newlly synthesised Schiffs bases and their complexes and tabulation of data obtained and submission of final synopsis.

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